2. (Amended) ~~The method according to claim 1, wherein step b) i) includes the steps of~~ A method of determining whether a voice signal includes a modulated data signal, the method comprising the steps of:

a) determining whether an answer tone is present in the voice signal;

b) when an answer tone is present, performing the steps of:

i) locating a first phase reversal in the voice signal, including:

1) performing an autocorrelation of a segment of the voice signal;

2) searching for the lowest value of the autocorrelation of the segment of the voice signal;

3) comparing the determined lowest value of the autocorrelation to a predetermined value; and

4) indicating a phase reversal has occurred when the determined lowest value is less than the predetermined value;

ii) locating a second phase reversal in the voice signal, the second phase signal being the next consecutive phase reversal in the voice signal after the first phase reversal;

iii) determining the time interval between the location of the first phase reversal in the signal and the second phase reversal in the voice signal; and

iv) indicating that the voice signal includes a modulated data signal when the determined time interval is between a predetermined range of time values.

3. (Amended) ~~The method according to claim 1, wherein step b) further includes the steps of~~ A method of determining whether a voice signal includes a modulated data signal, the method comprising the steps of:

a) determining whether an answer tone is present in the voice signal;

b) when an answer tone is present, performing the steps of:

i) locating a first phase reversal in the voice signal, including:

ii) locating a second phase reversal in the voice signal, the second phase signal being the next consecutive phase reversal in the voice signal after the first phase reversal;

iii) determining a first time interval between the location of the first phase reversal in the signal and the second phase reversal in the voice signal; and

iv) indicating that the voice signal includes a modulated data signal when the first determined time interval is between a predetermined range of time values;

v) when the first determined time interval is not between the predetermined range of time values, performing the steps of:

1) locating a third phase reversal in the voice signal, the third phase signal being the next consecutive phase reversal in the voice signal after the second phase reversal;

2) determining ~~the~~ a second time interval between the location of the second phase reversal in the signal and the third phase reversal in the voice signal;

3) indicating that the voice signal includes a modulated data signal when the second determined time interval between the location of the second phase reversal in the signal and the third phase reversal in the voice signal is between the predetermined range of time values; and

4) indicating that the voice signal does not include a modulated data signal when the second determined time interval between the location of the second phase reversal in the signal and the third phase reversal in the voice signal is not between the predetermined range of time values

4. (Amended) ~~The method according to claim 1, wherein step a) includes the steps of~~ A method of determining whether a voice signal includes a modulated data signal, the method comprising the steps of:

a) determining whether an answer tone is present in the voice signal, including:

1) selecting a segment of the voice signal;

2) converting the segment of the voice signal from a time domain signal to a frequency domain signal;

3) comparing the energy of a bin of the frequency domain signal that corresponds to the frequency of the answer tone with adjacent frequency bins; and

4) indicating that the answer tone is present in the segment of the voice signal when the energy of the frequency bin corresponding to the frequency of the answer tone is greater than the energy of the adjacent frequency bins;

b) when an answer tone is present, performing the steps of:

i) locating a first phase reversal in the voice signal;

ii) locating a second phase reversal in the voice signal, the second phase signal being the next consecutive phase reversal in the voice signal after the first phase reversal;

iii) determining the time interval between the location of the first phase reversal in the signal and the second phase reversal in the voice signal; and

iv) indicating that the voice signal includes a modulated data signal when the determined time interval is between a predetermined range of time values.

5. (Original) The method according to claim 4, wherein step a) includes the steps of:

a) selecting a segment of the voice signal; and

b) down sampling the selected segment of the voice signal.

6. (Original) A method of packetizing a digital voice signal for transmission over a digital voice network where the voice signal may include a modulated data signal, the method comprising the steps of:

a) determining whether an answer tone is present in the voice signal;

b) when an answer tone is present, performing the steps of:

i) locating a first phase reversal in the voice signal;

ii) locating a second phase reversal in the voice signal, the second phase signal being the next consecutive phase reversal in the voice signal after the first phase reversal;

iii) determining the time interval between the location of the first phase reversal in the signal and the second phase reversal in the voice signal; and

iv) when the determined time interval is between a predetermined range of time values performing the steps of:

a) demodulating the voice signal to generate a digital data signal;

b) packetizing the digital data signal into a plurality of digital packets for transmission over the digital voice network.

7. (Original) The method according to claim 6, wherein step b) i) includes the steps of:

a) performing an autocorrelation of a segment of the voice signal;

b) searching for the lowest value of the autocorrelation of the segment of the voice signal;

c) comparing the determined lowest value of the autocorrelation to a predetermined value; and

d) indicating a phase reversal has occurred when the determined lowest value is less than the predetermined value.

8. (Original) The method according to claim 6, wherein step b) further includes the steps of:

a) when the determined time interval is not between the predetermined range of time values, performing the steps of;

i) locating a third phase reversal in the voice signal, the third phase signal being the next consecutive phase reversal in the voice signal after the second phase reversal;

ii) determining the time interval between the location of the second phase reversal in the signal and the third phase reversal in the voice signal;

iii) when the determined time interval is between the predetermined range of time values performing the steps of:

a) demodulating the voice signal to generate a digital data signal;

b) packetizing the digital data signal into a plurality of digital packets for transmission over the digital voice network; and

iv) indicating that the voice signal does not include a modulated data signal when the determined time interval between the location of the second phase reversal in the signal and the third phase reversal in the voice signal is not between the predetermined range of time values.

9. (Original) The method according to claim 6, wherein step b) further includes the steps of:

a) when the determined time interval is not between the predetermined range of time values, performing the steps of;

i) locating a third phase reversal in the voice signal, the third phase signal being the next consecutive phase reversal in the voice signal after the second phase reversal;

ii) determining the time interval between the location of the second phase reversal in the signal and the third phase reversal in the voice signal;

iii) when the determined time interval between the location of the second phase reversal in the signal and the third phase reversal is between the predetermined range of time values performing the steps of:

a) demodulating the voice signal to generate a digital data signal;

b) packetizing the digital data signal into a plurality of digital packets for transmission over the digital voice network; and

iv) when the determined time interval between the location of the second phase reversal in the signal and the third phase reversal is not between the predetermined range of time values performing the steps of:

a) compressing the voice signal; and

b) packetizing the compressed voice signal into a plurality of digital packets for transmission over the digital voice network.

10. (Original) The method according to claim 6, wherein step a) includes the steps of:

a) selecting a segment of the voice signal;

b) converting the segment of the voice signal from a time domain signal to a frequency domain signal;

c) comparing the energy of a bin of the frequency domain signal that corresponds to the frequency of the answer tone with adjacent frequency bins; and

d) indicating that the answer tone is present in the segment of the voice signal when the energy of the frequency bin corresponding to the frequency of the answer tone is greater than the energy of the adjacent frequency bins.

11. (Original) The method according to claim 10, wherein step a) includes the steps of:

a) selecting a segment of the voice signal; and

b) down sampling the selected segment of the voice signal.

12. (Original) A method of packetizing a digital voice signal for transmission over a digital voice network where the voice signal may include a modulated data signal, the method comprising the steps of:

a) determining whether an answer tone is present in the voice signal; and

b) when an answer tone is present, performing the steps of:

i) locating a first phase reversal in the voice signal;

ii) locating a second phase reversal in the voice signal, the second phase signal being the next consecutive phase reversal in the voice signal after the first phase reversal;

iii) determining the time interval between the location of the first phase reversal in the signal and the second phase reversal in the voice signal; and

iv) when the determined time interval is between a predetermined range of time values performing the steps of:

a) encoding the voice signal into a digital data signal comprising the modulated data signal by linearly quantizing the voice signal; and

b) packetizing the coded voice signal into a plurality of digital packets for transmission over the digital voice network.

13. (Original) The method according to claim 12, wherein step b) i) includes the steps of:

a) performing an autocorrelation of a segment of the voice signal;

b) searching for the lowest value of the autocorrelation of the segment of the voice signal;

c) comparing the determined lowest value of the autocorrelation to a predetermined value; and

d) indicating a phase reversal has occurred when the determined lowest value is less than the predetermined value.

14. (Original) The method according to claim 12, wherein step b) further includes the steps of:

a) when the determined time interval is not between the predetermined range of time values, performing the steps of;

i) locating a third phase reversal in the voice signal, the third phase signal being the next consecutive phase reversal in the voice signal after the second phase reversal;

ii) determining the time interval between the location of the second phase reversal in the signal and the third phase reversal in the voice signal;

iii) when the determined time interval is between the predetermined range of time values performing the steps of:

a) encoding the voice signal into a digital data signal comprising the modulated data signal by linearly quantizing the voice signal; and

b) packetizing the coded voice signal into a plurality of digital packets for transmission over the digital voice network; and

iv) indicating that the voice signal does not include a modulated data signal when the determined time interval between the location of the second phase reversal in the signal and the third phase reversal in the voice signal is not between the predetermined range of time values.

15. (Original) The method according to claim 12, wherein step b) further includes the steps of:

a) when the determined time interval is not between the predetermined range of time values, performing the steps of;

i) locating a third phase reversal in the voice signal, the third phase signal being the next consecutive phase reversal in the voice signal after the second phase reversal;

ii) determining the time interval between the location of the second phase reversal in the signal and the third phase reversal in the voice signal;

iii) when the determined time interval between the location of the second phase reversal in the signal and the third phase reversal is between the predetermined range of time values performing the steps of:

a) encoding the voice signal into a digital data signal comprising the modulated data signal by linearly quantizing the voice signal;

b) packetizing the coded voice signal into a plurality of digital packets for transmission over the digital voice network; and

iv) when the determined time interval between the location of the second phase reversal in the signal and the third phase reversal is not between the predetermined range of time values performing the steps of:

a) compressing the voice signal; and

b) packetizing the compressed voice signal into a plurality of digital packets for transmission over the digital voice network.

16. (Original) The method according to claim 12, wherein step a) includes the steps of:

a) selecting a segment of the voice signal;

b) converting the segment of the voice signal from a time domain signal to a frequency domain signal;

c) comparing the energy of a bin of the frequency domain signal that corresponds to the frequency of the answer tone with adjacent frequency bins; and

d) indicating that the answer tone is present in the segment of the voice signal when the energy of the frequency bin corresponding to the frequency of the answer tone is greater than the energy of the adjacent frequency bins.

17. (Original) The method according to claim 16, wherein step a) includes the steps of:

a) selecting a segment of the voice signal; and

b) down sampling the selected segment of the voice signal.

18. (Original) A method of transmitting a digital voice signal over a digital voice network where the voice signal may include a modulated data signal, the method comprising the steps of:

a) determining whether an answer tone is present in the voice signal;

b) when an answer tone is present, performing the steps of:

i) locating a first phase reversal in the voice signal;

ii) locating a second phase reversal in the voice signal, the second phase signal being the next consecutive phase reversal in the voice signal after the first phase reversal;

iii) determining the time interval between the location of the first phase reversal in the signal and the second phase reversal in the voice signal; and

iv) when the determined time interval is between a predetermined range of time values performing the steps of:

a) demodulating the voice signal to generate a digital data signal;

b) packetizing the digital data signal into a plurality of digital packets for transmission over the digital voice network

c) transmitting the digital packets across the network;

d) converting the digital packets into a received digital signal;

e) determining whether the received signal includes a digital data signal;

f) when the received digital signal includes a digital data signal modulating the received digital signal into a modulated data signal.

19. (Original) The method according to claim 18, wherein step b) i) includes the steps of:

a) performing an autocorrelation of a segment of the voice signal;

b) searching for the lowest value of the autocorrelation of the segment of the voice signal;

c) comparing the determined lowest value of the autocorrelation to a predetermined value; and

d) indicating a phase reversal has occurred when the determined lowest value is less than the predetermined value.

20. (Original) The method according to claim 18, wherein step b) further includes the steps of:

a) when the determined time interval is not between the predetermined range of time values, performing the steps of;

i) locating a third phase reversal in the voice signal, the third phase signal being the next consecutive phase reversal in the voice signal after the second phase reversal;

ii) determining the time interval between the location of the second phase reversal in the signal and the third phase reversal in the voice signal;

iii) when the determined time interval is between the predetermined range of time values performing the steps of:

a) demodulating the voice signal to generate a digital data signal;

b) packetizing the digital data signal into a plurality of digital packets for transmission over the digital voice network; and

iv) indicating that the voice signal does not include a modulated data signal when the determined time interval between the location of the second phase reversal in the signal and the third phase reversal in the voice signal is not between a predetermined range of time values.

21. (Original) The method according to claim 18, wherein step b) further includes the steps of:

a) when the determined time interval is not between the predetermined range of time values, performing the steps of;

i) locating a third phase reversal in the voice signal, the third phase signal being the next consecutive phase reversal in the voice signal after the second phase reversal;

ii) determining the time interval between the location of the second phase reversal in the signal and the third phase reversal in the voice signal;

iii) when the determined time interval between the location of the second phase reversal in the signal and the third phase reversal is between the predetermined range of time values performing the steps of:

a) demodulating the voice signal to generate a digital data signal;

b) packetizing the digital data signal into a plurality of digital packets for transmission over the digital voice network; and

iv) when the determined time interval between the location of the second phase reversal in the signal and the third phase reversal is not between the predetermined range of time values performing the steps of:

a) compressing the voice signal; and

b) packetizing the compressed voice signal into a plurality of digital packets for transmission over the digital voice network;

and wherein the method further includes the step of when the received digital signal does not include a digital data signal decompressing the received digital signal into a voice signal.

22. (Original) The method according to claim 18, wherein step a) includes the steps of:

a) selecting a segment of the voice signal;

b) converting the segment of the voice signal from a time domain signal to a frequency domain signal;

c) comparing the energy of a bin of the frequency domain signal that corresponds to the frequency of the answer tone with adjacent frequency bins; and

d) indicating that the answer tone is present in the segment of the voice signal when the energy of the frequency bin corresponding to the frequency of the answer tone is greater than the energy of the adjacent frequency bins.

23. (Original) The method according to claim 22, wherein step a) includes the steps of:

a) selecting a segment of the voice signal; and

b) down sampling the selected segment of the voice signal.

24. (Original) A method of transmitting a digital voice signal over a digital voice network where the voice signal may include a modulated data signal, the method comprising the steps of:

a) determining whether an answer tone is present in the voice signal;

b) when an answer tone is present, performing the steps of:

i) locating a first phase reversal in the voice signal;

ii) locating a second phase reversal in the voice signal, the second phase signal being the next consecutive phase reversal in the voice signal after the first phase reversal;

iii) determining the time interval between the location of the first phase reversal in the signal and the second phase reversal in the voice signal; and

iv) when the determined time interval is between a predetermined range of time values performing the steps of:

a) encoding the voice signal into a digital data signal comprising the modulated data signal by linearly quantizing the voice signal;

b) packetizing the coded voice signal into a plurality of digital packets for transmission over the digital voice network

c) transmitting the digital packets across the network;

d) converting the digital packets into a received digital signal;

e) determining whether the received signal includes a coded voice signal; and

f) when the received digital signal includes a encoded data signal decoding the received digital signal into a modulated voice signal by dequantizing the received digital signal.

25. (Original) The method according to claim 24, wherein step b) i) includes the steps of:

a) performing an autocorrelation of a segment of the voice signal;

b) searching for the lowest value of the autocorrelation of the segment of the voice signal;

c) comparing the determined lowest value of the autocorrelation to a predetermined value; and

d) indicating a phase reversal has occurred when the determined lowest value is less than the predetermined value.

26. (Original) The method according to claim 24, wherein step b) further includes the steps of:

a) when the determined time interval is not between the predetermined range of time values, performing the steps of;

i) locating a third phase reversal in the voice signal, the third phase signal being the next consecutive phase reversal in the voice signal after the second phase reversal;

ii) determining the time interval between the location of the second phase reversal in the signal and the third phase reversal in the voice signal;

iii) when the determined time interval is between the predetermined range of time values performing the steps of:

a) encoding the voice signal into a digital data signal comprising the modulated data signal by linearly quantizing the voice signal;

b) packetizing the coded voice signal into a plurality of digital packets for transmission over the digital voice network; and

iv) indicating that the voice signal does not include a modulated data signal when the determined time interval between the location of the second phase reversal in the signal and the third phase reversal in the voice signal is not between the predetermined range of time values.

27. (Original) The method according to claim 24, wherein step b) further includes the steps of:

a) when the determined time interval is not between the predetermined range of time values, performing the steps of;

i) locating a third phase reversal in the voice signal, the third phase signal being the next consecutive phase reversal in the voice signal after the second phase reversal;

ii) determining the time interval between the location of the second phase reversal in the signal and the third phase reversal in the voice signal;

iii) when the determined time interval between the location of the second phase reversal in the signal and the third phase reversal is between the predetermined range of time values performing the steps of:

a) encoding the voice signal into a digital data signal comprising the modulated data signal by linearly quantizing the voice signal;

b) packetizing the coded voice signal into a plurality of digital packets for transmission over the digital voice network; and

iv) when the determined time interval between the location of the second phase reversal in the signal and the third phase reversal is not between the predetermined range of time values performing the steps of:

a) compressing the voice signal; and

b) packetizing the compressed voice signal into a plurality of digital packets for transmission over the digital voice network;

and wherein the method further includes the step of when the received digital signal does not include a encoded data signal decompressing the received digital signal into a voice signal.

28. (Original) The method according to claim 24, wherein step a) includes the steps of:

a) selecting a segment of the voice signal;

b) converting the segment of the voice signal from a time domain signal to a frequency domain signal;

c) comparing the energy of a bin of the frequency domain signal that corresponds to the frequency of the answer tone with adjacent frequency bins; and

d) indicating that the answer tone is present in the segment of the voice signal when the energy of the frequency bin corresponding to the frequency of the answer tone is greater than the energy of the adjacent frequency bins.

29. (Original) The method according to claim 28, wherein step a) includes the steps of:

a) selecting a segment of the voice signal; and

b) down sampling the selected segment of the voice signal.

30. (Original) The method according to claim 12, wherein step b) iv) a) includes the steps of:

a) normalizing the voice signal; and

b) converting the normalized voice signal into a digital floating point signal.

31. (Original) The method according to claim 30, wherein step a) includes the steps of:

a) finding the sample of the voice signal having the maximum value; and

b) normalizing the sample of the voice signal having the maximum value by left shifting the sample until all redundant sign bits are eliminated where NLS is the number of left shifts; and

c) right shifting all the samples of the voice signal as a function of NLS.

32. (Original) The method according to claim 31, wherein step c) includes the step of right shifting all the samples of the voice signal as a function of NLS and the bit precision of the mantissa of the floating point signal.

33. (Original) The method according to claim 31, wherein step c) includes the step of right shifting all the samples of the voice signal by 16 – NLS – N_prec where N_prec is the bit precision of the mantissa of the floating point signal.

34. (Original) The method according to claim 33, wherein N_prec is set to 4 for 24.8 bits per second (BPS) data signals, 5 for 30.8 BPS data signals, 6 for 36.8 BPS data signals, and 7 for 42.8 BPS data signals.

35. (Original) The method according to claim 30, further including the step of downsampling the voice signal from a first rate to a second lower rate.

36. (Original) The method according to claim 24, wherein step b) iv) a) includes the steps of:

a) normalizing the voice signal; and

b) converting the normalized voice signal into a digital floating point signal.

37. (Original) The method according to claim 36, wherein step a) includes the steps of:

a) finding the sample of the voice signal having the maximum value; and

b) normalizing the sample of the voice signal having the maximum value by left shifting the sample until all redundant sign bits are eliminated where NLS is the number of left shifts; and

c) right shifting all the samples of the voice signal as a function of NLS.

38. (Original) The method according to claim 37, wherein step c) includes the step of right shifting all the samples of the voice signal as a function of NLS and the bit precision of the mantissa of the floating point signal.

39. (Original) The method according to claim 37, wherein step c) includes the step of right shifting all the samples of the voice signal by 16 – NLS – N_prec where N_prec is the bit precision of the mantissa of the floating point signal.

40. (Original) The method according to claim 39, wherein N_prec is set to 4 for 24.8 bits per second (BPS) data signals, 5 for 30.8 BPS data signals, 6 for 36.8 BPS data signals, and 7 for 42.8 BPS data signals.

41. (Original) The method according to claim 36, further including the step of downsampling the voice signal from a first rate to a second lower rate.

42. (Original) A method of packetizing a digital voice signal for transmission over a digital voice network where the voice signal may include a modulated data signal, the method comprising the steps of:

a) determining whether the digital voice signal includes a modulated data signal; and

b) when the digital voice signal includes a modulated data signal, performing the steps of:

i) encoding the voice signal into a digital data signal comprising the modulated data signal by linearly quantizing the voice signal; and

ii) packetizing the coded voice signal into a plurality of digital packets for transmission over the digital voice network.

43. (Original) The method according to claim 42, wherein step b) i) includes the steps of:

a) normalizing the voice signal; and

b) converting the normalized voice signal into a digital floating point signal.

44. (Original) The method according to claim 43, wherein step a) includes the steps of:

a) finding the sample of the voice signal having the maximum value; and

b) normalizing the sample of the voice signal having the maximum value by left shifting the sample until all redundant sign bits are eliminated where NLS is the number of left shifts; and

c) right shifting all the samples of the voice signal as a function of NLS.

45. (Original) The method according to claim 44, wherein step c) includes the step of right shifting all the samples of the voice signal as a function of NLS and the bit precision of the mantissa of the floating point signal.

46. (Original) The method according to claim 44, wherein step c) includes the step of right shifting all the samples of the voice signal by 16 – NLS – N_prec where N_prec is the bit precision of the mantissa of the floating point signal.

47. (Original) The method according to claim 46, wherein N_prec is set to 4 for 24.8 bits per second (BPS) data signals, 5 for 30.8 BPS data signals, 6 for 36.8 BPS data signals, and 7 for 42.8 BPS data signals.

48. (Original) The method according to claim 43, further including the step of downsampling the voice signal from a first rate to a second lower rate.

49. (Original) A method of transmitting a digital voice signal over a digital voice network where the voice signal may include a modulated data signal, the method comprising the steps of:

a) determining whether the digital voice signal includes a modulated data signal;

b) when the digital voice signal includes a modulated data signal, performing the steps of:

   i) encoding the voice signal into a digital data signal comprising the modulated data signal by linearly quantizing the voice signal;

   ii) packetizing the coded voice signal into a plurality of digital packets for transmission over the digital voice network

c) transmitting the digital packets across the network;

d) converting the digital packets into a received digital signal;

e) determining whether the received signal includes a coded voice signal; and

f) when the received digital signal includes a encoded data signal decoding the received digital signal into a modulated voice signal by dequantizing the received digital signal.

50. (Original) The method according to claim 49, wherein step b) i) includes the steps of:

a) normalizing the voice signal; and

b) converting the normalized voice signal into a digital floating point signal.

51. (Original) The method according to claim 50, wherein step a) includes the steps of:

a) finding the sample of the voice signal having the maximum value; and

b) normalizing the sample of the voice signal having the maximum value by left shifting the sample until all redundant sign bits are eliminated where NLS is the number of left shifts; and

c) right shifting all the samples of the voice signal as a function of NLS.

52. (Original) The method according to claim 51, wherein step c) includes the step of right shifting all the samples of the voice signal as a function of NLS and the bit precision of the mantissa of the floating point signal.

53. (Original) The method according to claim 51, wherein step c) includes the step of right shifting all the samples of the voice signal by 16 – NLS – N_prec where N_prec is the bit precision of the mantissa of the floating point signal.

54. (Original) The method according to claim 53, wherein N_prec is set to 4 for 24.8 bits per second (BPS) data signals, 5 for 30.8 BPS data signals, 6 for 36.8 BPS data signals, and 7 for 42.8 BPS data signals.

55. (Original) The method according to claim 50, further including the step of downsampling the voice signal from a first rate to a second lower rate.

REMARKS

Reconsideration and further examination is respectfully requested. The Applicants have cancelled claim 1 and amended claims 2-5. The Examiner has rejected claim 1 under 35 USC § 102(e) as being anticipated by US Patent No. 6,263,016 to Bellenger et al ("Bellenger"). The Examiner has rejected claims 6, 12, 18, 24, 42, and 49 under 35 USC § 103(a) as being